FIG. 1—1   FIG. 1A

```
agatctcaccagctgaggtcttgggaggaggagatactggctgagccctattacttaattaaaatacccttaggggaggagccaccaccagtgatgatgcgggctcctgtgaatccttgcttg   120
actccagcgggttacctttgcctctgatacataaaggtgggatgggggatggagcgctctcctcctctccctgccttgctgtgggaaggaggtgcaggtgtccaggaag                    240
ccagtgccaggaggagtgctatgctgagtcagctccaggagcctggcacgcaggggtgacagatggtggcagaggaaccacgtgtccttcctccagattagctaaagaaacgtggagca       360
tcccattggccatcctccccactctccattcgctccagaggccctccagactataggcagctgccctttaagcgtcgccctctgctctccctcccccccagcagccaggtgggcaccgaggagttgg   480
ggtggggggaggctgagcgctctggctgggacagtcagagaagatgcccaggctgggaagtcgctctcatgcttgctgtcccctcccctgagccaggtgatttgggagaccccctcc          600

ttccttcttcctaccgcccaccagcgaccgggg ATG GCT CCG TCG CCT CAC GAG AAC AGC TCT CTT GCC CCA TCC CCA TCC GAC CTC CCC ACC CTG   697
                                   M   A   P   W   P   H   E   N   S   S   L   A   P   W   P   D   L   P   T   L          20

GCG CCC AAT ACC GCC AAC ACC AGT GGG CTG CCA GGG GTT CCG GAG GCG GCC CTA GCC GGG GCC CTG CTG GCG CTG GCC GTG CTG GCG GCC   787
A   P   N   T   A   N   T   S   G   L   P   G   V   P   E   A   A   L   A   G   A   L   L   A   L   A   V   L   A   A          50

ACC GTG GGA GGC AAC CTG ATC GTC ATC CTG GTG GTG GTG CTG ACC CAG AGA CTC CGA ATG GTG TTC GGC GGT TTG ACT TCG CTG CTG GCC   877
T   V   G   G   N   L   I   V   I   L   V   V   V   L   T   Q   R   L   R   M   V   F   G   G   L   T   S   L   L   A          80

GCA GCC GAC CTG ATG GGA CTG TCG GTG GAC GTG CTG CTG GTG TGT GTG TGC TTG GGC CGG CTG GTG CTG GTG TAC TTG TCA GTG CTG ACT   967
A   A   D   L   M   G   L   S   V   D   V   L   L   V   C   V   C   L   G   R   L   V   L   V   Y   L   S   V   L   T          110

GAG CTG TCG TGG TAC ACC GGC CTG CTG TGC CGC CTG GCC GTG GCC GTG GAC CGC TAC CTG GCG GTG TGG TCG GTG ACC   1057
E   L   S   W   Y   T   G   L   L   C   R   L   A   V   A   V   D   R   Y   L   A   V   W   S   V   T          140

AAC CCG CTG CGT TAC GGC GCA CTG GTC ACC AAG CGC CGG GTC GTG GGC GTG TCG CTG GTG TGG GTG GTG TCG TTT   1147
N   P   L   R   Y   G   A   L   V   T   K   R   R   V   V   G   V   S   L   V   W   V   V   S   F           170

GCG CCC ATC ATG AGC CAG TGG TGG CGC GTA CGG CAG GCC GAG GAG CAG CGC CGC TTC GCC TGC TTT TCC GCC TCC   1237
A   P   I   M   S   Q   W   W   R   V   R   Q   A   E   E   Q   R   R   F   A   C   F   S   A   S           200

AAC ATG ATG TAC ACC TTC TCC TCC CTG GTC TCC TCC GTC CTC CTC GTG ATG GCG CGG GTT TTC CTG CGG TAC CCG CTG CTC GCC TAC TTC   1327
N   M   M   Y   T   F   S   S   L   V   S   S   V   L   L   V   M   A   R   V   F   L   R   Y   P   L   L   A   Y   F          230

GCT ACG ACG CGC CAG CGC CTG CGC CGC CTT GTC GGC GTC TCT GAG GAG GGG GAG GAG GGG CTC GGG CCG CCT CCG CCA CGG CCG   1417
A   T   T   R   Q   R   L   R   R   L   V   G   V   S   E   E   G   E   E   G   L   G   P   P   P   P   R   P           260

GCC CCG GTG GGG GCC TGC GCG ACG TGC ACC ATC GCC GTC TAC CTC CTG GGC GTG TCG CTG GCC GCC GAA CAC CGG GGC   1507
A   P   V   G   A   C   A   T   C   T   I   A   V   Y   L   L   G   V   S   L   A   A   E   H   R   G           290

CTG TGC ACC TTG GGT GGT ATC ATG ATG TGG CTT TTC CTC TTC TCT GCC AAT TCT GCC GTG CTG CGC GGG GGC CCC   1597
L   C   T   L   G   G   I   M   M   W   L   F   L   F   S   A   N   S   A   V   L   R   E   A   R   P           320

TCT CTA GTC GTC CGC GCT TTC CTG CTG TGC TGG CTA AAC TGG CTG GGC TAC CGC AAC AAC TTC AAC CCG CTC ATC TAC TGC CGC CTC TTC   1687
S   L   V   V   R   A   F   L   L   C   W   L   N   W   L   G   Y   R   N   N   F   N   P   L   I   Y   C   R   L   F          350

GAC TTT CGC AGC GCC GCC TTC CGC CGC GTC CTG CGC CGG CTT CTG TGC AGG GCC CCA GCG CCC CGT CGC CCG CGG CTT CTG TGC   1777
D   F   R   S   A   A   F   R   R   V   L   R   R   L   L   C   R   A   P   A   P   R   R   P   R   L   L   C          380

CCC TCG GGC GTT CCT GCG GCC CGG AGC AGC CCA GCG CCC CGG CTT CTG TGC AGG CCC CTC GAC GG|gtaggtaaccgggcagaggaggaccgccggggctc   1874
P   S   G   V   P   A   A   R   S   S   P   A   Q   P   R   L   C   Q   R   L   D   G| Donor                                   402
```

FIG. 1-2 FIG. 1B

```
agggtcgggaagcatgcgatgtgtccgtggctggtcaacttttgagtgtggagttattaagagaagtgggatggctttgcttggagagagaggagtagcgaccaaaatgg   1994
gaccagggtccttttcttccgatccagtccagtcactaggtagaagcaaagagggcgagcggccgtcgttcctcaccaagacccagacgctgcggtgtccc            2114
gaggactctcgcctggtcggcttaggatttttttttttaaatagagacaggtttcgtctctgtcgcccacgacccaccaatccagctatttttaaaattctt          2234
tgaactcctggctcctggctcaagcgatcctccacctgagtatctggagtatctgagtatctgctcagctctcagtgatcctctgcctcaagtgatctt            2354
gctatgttgccaggcttgtcttgaacttctgaacttctccccctcctccccgattcttcttgccatcactagacctggctcgagtctggcctcagttctgg         2474
tccagtcagttcttttgccccctccctccggtgaggtgagaatccacttccggtatgaagtacagttgtgagtagcctgtgagtctgtaacctaaatatgcgttccagg  2594
ttttctcaaaggtttgacacgctgtggggcgtgtggtgcctgggtggtgcctggttttgtgtaactaaatatgcgttccaggtctctgtcattccctcagtgacctgt   2714
tagggatggggtggggcgtgtggtgcctgggtggtgcctggttttgtgtaactaaatatgcgttccaggtctctgtcattccctcagtgacctgttgctccttcac     2834
cccagggtctattatctccacttttttcccagg  gct tct tgg gga gtt tct tag  gcctgaaggacaagaagcaacactctgttgatcagaaccctgtggaaaaccctgg  2945
          Acceptor  A   S   W   G   V   S   *                                                                            408
cctctgttcagaatgagtccatgggattccccgctgtgacactctaccctccagaacctgacgactggccatgtgacccaaggaggatccttaccagtggtttcaccatcctc  3065
ttgctctctgtctgagagatgttttctaaacccagccttgaacttcactcctccctcagtgtagtgccgtggagcagcaggcttggtaggggcacccatcacccg         3185
gcttgcctgtcagtgagtcagtgagtcaagacccgatgagaaccctgttccattcctctgccacccaaacctgttcctgcaggctctgtggccaggctgaga          3305
gcagcagggtagaaaagaccaagattgggtttttatctgttcccttatctgttcccttatatctgttcccttataagaagtgaaccattagaacagat         3425
tcagaaggacttcgccaggtttgcaggactccagggtcattagaacagatcaatcagat[aataa]catcactgatgaatgcagttcat              3545
cctcggccccccttttccctccgtcgtttcttgttttcttttcataatccacttactccctttccctttccctttccctcgctttgacagaggcgtaaattaggcctaatcctcactctttttccttccta  3665
atgttcatcaaagaaaa                                                                                                    3683
```

FIG. 2-1 FIG. 2A

```
gatctgtaatcccagcactgggggaggttgaggcagagaggatctggagtccagaccaatctggccagacc        120
agaggggggctatctgccaggaggagctggttggttggttgttcttggtttttggttttcttcttcttgcaggt        240
gcctcagttctgccgcagaaggagctgctgagctgcaggaaaccggtgctgagtgtgctgcaggga         360
ggacgctgttccttaaaagcagcagcactctccgggcaactaggggtgtacatggggggtgagatggccaggctggaag       480
agtcgctcccaagcctactgtcccccttcccctagccagcgggctgggaggaggggaaccttcccacccaggcgcacacgag   591
                                                                    ATG GCT CCG TGG CCT CAC AGA AAC    8
                                                                     M   A   P   W   P   H   R   N

GGC TCT CTG GCT TTG TGG TCG GAC GCC CCT ACC CTG GAC CCC AGT GCA GCC AAC ACC AGT GGG TTG CCA GGA GTA CCA TGG GCA GCG GCA    681
 G   S   L   A   L   W   S   D   A   P   T   L   D   P   S   A   A   N   T   S   G   L   P   G   V   P   W   A   A   A    38

TTG GCT GGG GCA TTG CTG GCG CTG GCA TTG CTG GGA GGC AAC CTG CTG AAC CTG CTA GTA ATC GCC ATC GCC CCG AGA CTA CAG ACC ATA    771
 L   A   G   A   L   L   A   L   A   L   L   G   G   N   L   L   N   L   L   V   I   A   I   A   P   R   L   Q   T   I    68

ACC AAC GTG TTC CTG CTG AGC GCT CTG GCA GCT TCA CTG GCC GCA ATG CCA CTC GTA GTG GGA CTC GTG GTA GCT GCA GAT GCG ACT GGC    861
 T   N   V   F   L   L   S   A   L   A   A   S   L   A   A   M   P   L   V   V   G   L   V   V   A   A   D   A   T   G    98

CAT TGG CCC TTG GGC GAA ACT GGT TGC TGG GTA GAC CTG TGG ACG TCA GTG GAC GTG CTC TGT GTT ACC CTC TAC TGC CTC GTA TCC TGC   951
 H   W   P   L   G   E   T   G   C   W   V   D   L   W   T   S   V   D   V   L   C   V   T   L   Y   C   L   V   S   C   128

GCT GTG GAC CGC CGC TAC CTA GCT GTC GTC CGT TAC CGC AAC CTG CTG CGC ACG CGC CGC GCA AGG CGC GCA GTT GTC CTG GTG        1041
 A   V   D   R   R   Y   L   A   V   V   R   Y   R   N   L   L   R   T   R   R   A   R   R   A   V   V   L   V        158

TGG ATC GTG TCC GCT GCC GTG TCC TTT CCT CCC ATC ATG AGC CAG CAG TGG GGA GAA CAG TGC CAC TCC          1131
 W   I   V   S   A   A   V   S   F   P   P   I   M   S   Q   Q   W   G   E   Q   C   H   S          188

AAT CCG CGC TGC TGT GAC TTC GTT ACC AAC AGG GCG TAC GCC ATC GCC TCC TCC GTC GTG GTG ATG CTC           1221
 N   P   R   C   C   D   F   V   T   N   R   A   Y   A   I   A   S   S   V   V   V   M   L           218

TTC GTC TAT GCT CGA GTG TTC GTT GTT GCC CGC CGG AGC CGG AAG CGG CGG AGA GAG TCT CCG           1311
 F   V   Y   A   R   V   F   V   V   A   R   R   S   R   K   R   R   R   E   S   P           248

CCG TCT CCG CGC TCG CGC CGC CCT CCT GCC CCA CGG GGG CTG GGC CGG CGG CCT GCG CGC           1401
 P   S   P   R   S   R   R   P   P   A   P   R   G   L   G   R   R   P   A   R           278

CTC CTG CCA CTC GGA CAC CGC GCG GGA ACC TTA GGT CTC ATT ATG GGC TAT GCC AAC TCC GCC           1491
 L   L   P   L   G   H   R   A   G   T   L   G   L   I   M   G   Y   A   N   S   A           308

AAC GTG CTG CGC ATC TAC TGC CGC GAC CCC TCT CGT CGT CTT CGT AGC TAC GGT GGC GAG GAG CCA           1581
 N   V   L   R   I   Y   C   R   D   P   S   R   R   L   R   S   Y   G   G   E   E   P           338

AAC CCG GTC ACC TTC CCA GCC CTG GAT TTC CGC CGG AGG CTC AAC CGT GGA GAG CCG           1671
 N   P   V   T   F   P   A   L   D   F   R   R   R   L   N   R   G   E   P           368

CGC GCA GTC ACC TTC CCA GCC GTT GAA GCC CCT GTT GCA GCC AGG CAG CTC AAC AG|gtagggacaacgagcggggggaccgagtcctgggtgggga   1771
 R   A   V   T   F   P   A   V   E   A   P   V   A   A   R   Q   L   N   R |_Donor 1                                    387
```

B

FIG. 2-2 FIG. 2B

```
cgtctctgtctctattttgagtttgagatgtagatgggggaggggaagatgtagatgggggtgcggtttgtcttgagaggacagaaagaggtaggaac  1891
taaaacgggccctttctctcttgatccaatccctgggtctggttcttgaagcaggaagggagataattgcgcacctgaccccacaggcagttgctgctcttccggca  2011
ggtttctgacctctctgtgctcctcagttggggttggtttgtttgtttgttcttttgttttgtttttgttttgttgtttttagttccctttcggaaccaggcatctctatacctgtctgg  2131
gatatccatagacagcagcaatgactccctagtccctggcctcggcctctctctctcaaag G TTT GAT GGC TAT GAA GGT GCG CGT CCG TTT CCC ACG tgaaggg  2237
```

```
                                                         Acceptor 1   F  D  G  Y  E  G  A  R  P  F  P  T  *        400
```

```
ccgtgaagatccagcaaggaagctgtgagttggcttgagttgcttgagttgctttcctccctcaggactagaattagaactataggtgggggactgggggagggtgcaggatggaccctatg  2357
ggattggggggtgagtagagggatgcgggaatggtcccctatatcttgaaaagtgaatatgcttttcagggttcctgaatacttcctttctttcagtgctgatcccatcttct  2477
tgactggttgccccaagaaatattgtttccgttttgcaggacttctgggggattttttttttcctccagaaagacaagcaacggctatggatgcaacatttttatataatgcctttgatttc  2597
```

```
      Acceptor 2
```

```
tactcagtagtgagtccctgaacctcaactctccaacgctccagaaccgatgactagaccacgaggtgtaaggaaatcttaccaaatgggtttcaccgtcctctctctttccgaga  2717
gaagttgtctaagacccaccttgaacttcactactacctcagcagctgacggcagccacctgtgcttgacggcggcaggcagccatgcctgcttcctccaacctgctccctctactgcctccctgcc  2837
tatgtttgtgctgtatgcttaggaaaagagagagcaccctccccttcttcctaacctgctgatgatcgacatgttcctccacaaatcactcctgtctccaggctctgt  2957
gtcctcggtagttgagagcaggaatccaggaaaaaaaaagtttgaggttcatccctcactaggaagaagtcaaactattggaatggtcctttttcacttaaaatcaaattaataaa  3077
acagctctaatctcacctacctacagttacacagttcaggttcatcagggttcatcagaggaaattcaaggttcatcagggttcatggtcctttgtttcttttgttttttttttgttttttttgttttt  3197
tattattgaatggttgtcccctgtccccgtctgctgctgtggtttgtcctgctcgcttgctcgcttccgagctggcttccgagctgcggctgcgttgacagggcagtaaattaggagt  3317
aatccctgcctgcctttcttcctaatcctcatcagacacaaccagaagaagtctgtctgtgtaagtgaggcagtcgagtcttgaaacttttctgaaactttgagatc  3437
```